

ABSTRACT OF THE DISCLOSURE

5 The present invention is directed to modulating ion beam current in an ion implantation system to mitigate non-uniform ion implantations, for example. Multiple arrangements are revealed for modulating the intensity of the ion beam. For example, the volume or number of ions within the beam can be altered by biasing one or more different elements downstream of the ion source. Similarly, the dosage of ions within the ion beam can also be manipulated by controlling elements more closely associated with the ion source. In this manner, the implantation process can be regulated so that the wafer can be implanted with a more uniform coating of ions.